

What is claimed is:

1. A vertical structure thin film transistor comprising a stacked structure of a substrate; a first electrode; a dielectric thin film; a second electrode; a semiconductor thin film; and a third electrode, wherein current flows between the second and third electrodes perpendicularly to the substrate and is modulated by an electric field generated from the first electrode parallel to the current.

2. The vertical structure thin film transistor according to claim 1, wherein the first electrode, the dielectric thin film, the second electrode, the semiconductor thin film, and the third electrode are stacked sequentially on the substrate.

3. The vertical structure thin film transistor according to claim 1, wherein the third electrode, the semiconductor thin film, the second electrode, the dielectric thin film, and the first electrode are stacked sequentially on the substrate.

4. The vertical structure thin film transistor according to claim 1, wherein the substrate is a monocrystalline silicon, glass, or plastic substrate.

5. The vertical structure thin film transistor according to claim 1, wherein the semiconductor thin film is an inorganic semiconductor thin film.

6. The vertical structure thin film transistor according to claim 1, wherein the semiconductor thin film is an organic semiconductor thin film.

7. The vertical structure thin film transistor according to claim 1, wherein the second electrode is divided into several electrode portions spaced apart from each other so that the electric field generated from the first electrode acts on the semiconductor thin film to induce a charge.